

SECTION 15465
COMPRESSED AIR SYSTEM

Edit to suit project

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Pipe fittings, valves and accessories
- B. Filters
- C. Drain valves
- D. Oil/Water separators
- E. Air dryers
- F. Pressure regulating valves
- G. Air compressors

1.2 SUBMITTALS

- A. Submit the following for all equipment specified in this section in accordance with the requirements of Section 01300.
 - 1. Catalog Data
 - 2. Installation Instructions
 - 3. Materials/Parts List
 - 4. Operational and Maintenance Manual
 - 5. Warranties

1.3 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with minimum 5 years experience and having maintenance service within 200 miles radius of the installation.
- B. Material and Installation: Conform to ASME B31.9, Building Services Piping for systems operating at pressure of 125 psig or less and at temperature of 200 degrees F or less. For systems beyond above pressure and temperature limitations, conform to ANSM B31.1, Power Piping.

1.4 WARRANTIES

- A. Provide a minimum of 1 year manufacturer's warranty, parts and labor, for air compressor system.

PART 2 PRODUCTS

2.1 PRODUCT SUBSTITUTION

- A. Refer to Section 01630.

2.2 COPPER TUBING AND FITTINGS (up to 2 inches)

- A. Tubing: Copper, hard drawn, ASTM B88, Type L.
- B. Fittings: Wrought copper, ASME B16.22
- C. Joints: ASTM B32, solder, Grade 95TA

2.3 STEEL PIPE AND FITTINGS (over 2 inches)

- A. Pipe: Black steel, ASTM A53, Schedule 40
- B. Fittings: Steel, ASTM A234, Grade B, Schedule 40, butt welding type
- C. Joints: Welded

2.4 VALVES

- A. Gate Valves: Class 125 or 150, bronze body, bronze trim, rising stem, handwheel, inside screw, solid wedge disc, solder or threaded ends to suit piping.
- B. Ball Valves: Class 150, bronze, 2 piece body, chrome-plated brass ball, regular port, teflon seats and stuffing box ring, lever handle, solder or threaded ends to suit piping.

2.5 STRAINERS

- A. "Y" type, class 150, 20 mesh stainless steel screen, cast iron body, with blowoff gate valve and plug.

2.6 UNIONS AND COUPLINGS

- A. Unions
 - 1. Ferrous Pipe: 150 psi malleable iron threaded unions.
 - 2. Copper Tube and Pipe: 150 psi bronze unions with soldered joints.
- B. Dielectric Connections: Union with galvanized or plated steel threaded end, copper solder end, water impervious isolation barrier.

2.7 FLEXIBLE CONNECTORS

- A. Seamless braided bronze hose with ends suitable for piping system

2.8 FILTER-GENERAL PURPOSE COALESCING

When selecting filter, assume maximum flow conditions at the minimum operating pressure.

- A. Manufacturer: Van Air, Series F200
- B. General purpose coalescing filter, Grade B, particle removal down to 1.00F, efficiency 99.99

percent at 0.6F, maximum oil carryover 0.78 PPM by weight, maximum inlet temperature 175 degrees F, clean dry pressure drop 0.75 psi, housing maximum working pressure 250 psig at 225 degrees F, with NPT inlet and outlet connections to match system pipe size. Furnish with optional two-sided color coded pressure differential indicator, and internal float drain.

1. Flow Capacity: [] scfm at 100 psig

2.9 FILTER-HIGH EFFICIENCY COALESCING

When selecting filter, assume maximum flow conditions at the minimum operating pressure.

- A. Manufacturer: Van Air, Series F200
- B. High efficiency coalescing filter, Grade C, particle removal down to 0.01F, efficiency 99.9999 percent at 0.6F, maximum oil carryover 0.008 ppm by weight, maximum inlet temperature 125 degrees F, clean dry pressure drop 1.50 psi, housing maximum working pressure 250 psig at 225 degrees F, with NPT inlet and outlet connections to match system pipe size. Furnish with optional two-sided color coded pressure differential indicator, and internal float drain.

1. Flow Capacity: [] scfm at 100 psig

2.10 FILTER-HIGH EFFICIENCY PARTICULATE

When selecting filter, assume maximum flow conditions at the minimum operating pressure.

- A. Manufacturer: Van Air, Series F200
- B. High efficiency particulate filter, Grade RC, particle removal down to 0.01F, efficiency 99.9999 percent at 0.6F, maximum inlet temperature 225 degrees F, clean dry pressure drop 1.50 psi, housing maximum working pressure 250 psig at 225 degrees F, with NPT inlet and outlet connections to match system pipe size. Furnish with optional two-sided color-coded pressure differential indicator and internal float drain.

1. Flow Capacity: [] scfm at 100 psig

2.11 DRAIN VALVE

- A. Manufacturer: Van Air, Model EDV-2002
- B. Solenoid valve, brass body, NEMA 4 enclosure, rated at 300 psig, 1 to 60 seconds valve open time and cycle time, NPT inlet and outlet connections to match system pipe size, 6 foot power cord with plug, electrical [115V/ 1 PH/60 Hz at .12 amps] or [230V/ 1 PH/ 60 Hz at .12 amps], maximum fluid temperature 210 degrees F, and ambient temperature range 32-150 degrees F.

2.12 OIL/WATER SEPARATOR

2 in size - compressors 5hp and less
4 in size - compressors greater than 5hp

- A. Manufacturer: Eggelhof Inc.

- B. 4 in. oil/water separator, ABS construction, 20 in. long, No. 4 X 20GBU.
- C. 2 in. oil/water separator, ABS construction, 20 in. long, No. 195BC1ABS
- D. Furnish above with a safety cable and a 20 X 20 in polypropylene absorbent pad.

2.13 REGENERATIVE AIR DRYER

 For inlet temperatures to 110 degrees F, capacity: 150-5000 scfm at 100 psig

- A. Manufacturer: Van Air, Model HL-[]
- B. Heatless, regenerate dryer, minus 40 degrees F dew point, twin towers, with adsorbent desiccant, purge exhaust valve and muffler, drain connection and cycle saver control option which adjusts dryer purge to actual moisture load condition and includes failure to switch (FTS) alarm.
 - 1. Capacity: [acfm] at [psig]
 - 2. Power Voltage: [] V, [] phase, [] Hz.

2.14 REFRIGERATED AIR DRYER (Air Cooled)

 Capacities 10-1250 scfm

- A. Manufacturer: Van Air, Model RAD-[]
- B. Refrigerated air dryer, air cooled condenser, 35-38 degrees F dew point, indoor installation (ambient temperature 40-100 degrees F), automatic drain valve, and charged with R134 or R22 refrigerants.
 - 1. Capacity: [] acfm at []degrees F inlet temperature and [] psig inlet pressure.
 - 2. Power Voltage: [] V, [] phase, []Hz.

2.15 REFRIGERATED AIR DRYER (Water Cooled)

- A. Manufacturer: Van Air, Model RWD-[]
- B. Refrigerated Air Dryer, water cooled, 35-38 degrees F dew point, indoor installation (ambient temperature 40-100 degrees F), automatic drain valve, water regulating valve.
 - 1. Capacity: [] acfm at []degrees F inlet temperature and [] psig inlet temperature.
 - 2. Power Voltage: [] V, [] phase, [] Hz.

2.16 PRESSURE GAUGE

- A. Manufacturer: Weksler, BA 13-2F
- B. Minimum 3 in. dial, 1/4 in. NPT brass bottom connection, 1 percent accuracy at full scale, ABS or steel case

1. Range: As specified on drawings

2.17 PRESSURE REGULATING VALVE

- A. Manufacturer: Watts, No. R119 Series
- B. Reduced pressure type, range [0-125 psig], diaphragm operated, relieving spring adjustment mechanism, rated at 300 psig maximum, temperature range 40-120 degrees F. Line size.

2.18 AIR COMPRESSORS

Consult with the manufacturer's representative and the Mechanical Standards, Section 206.29 for specifications.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Install compressor unit on concrete housekeeping pad.
- B. Install compressor unit on vibration isolators. Level and bolt in place.
- C. Install line size gate valve on compressor discharge.
- D. Install replaceable cartridge type filter silencer of adequate capacity for each compressor.
- E. Route condensate drains to nearest floor drain.
- F. Install valved drip connections at low points of piping system.
- G. Install take offs to outlets from top of main, with shut off valve after take off. Slope take off piping to outlets.
- H. Install compressed air couplings, female quick connectors, and pressure gages where outlets are indicated.
- I. Identify piping system. Refer to Section 15190.
- J. Pressure test compressed air piping. Refer to Section 15992.
- K. Cap and seal ends of piping when not connected to mechanical equipment.

END OF SECTION